Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

indicates that the mesoblastic pole cells of annelids and mollusks are to be regarded both historically and ontogenetically as derivatives of the archenteron, and that the rudimentary cells of Aricia and Spio are vestiges or ancestral reminiscences of such origin.

A reëxamination of the cell lineage of a polyclade, Leptoplana, shows that, as in the annelid or gasteropod, all of the first three quartets of micromeres give rise to ectoblast, while the second quartet gives rise also to mesoblast, each cell of this quartet segmenting off three ectoblast cells, and then delaminating a large mesoblast cell into the interior. The third quartet apparently gives rise to ectoblast alone, though the possibility of its producing mesoblast is not excluded. The four macromeres remaining give rise to the archenteron, as Lang describes, first dividing to form four basal cells (corresponding in origin and position with the four basal entomeres of annelids and mollusks) and four much larger upper cells which correspond to the fourth quartet of micromeres in annelids and mollusks. The posterior of these cells always divides before the others, sometimes equally and symmetrically, as in Discocoelis (Lang), but more often unequally. The cells thus formed give rise to a part of the archenteron, and not, so far as can be determined, to mesoblast.

These observations show that the mesoblast of polyclades is of ectoblastic origin, and they suggest that the origin of mesenchyme cells from the second (Unio, Crepidula) or third (Physa, Planorbis) quartets in gasteropods may be a vestige or ancestral reminiscence of the mesoblast formation in the polyclades. They suggest, further, that the mesoblast bands (entomesoblast) of annelids and mollusks may have been historically of later origin than the mesenchyme (ectomesoblast) — a view which harmonizes, broadly speaking, with that of Meyer — and that the two symmetrical entoblast cells into which the posterior member of the fourth quartet divides in the polyclade may represent the prototypes of the entomesoblasts of the annelids and gasteropods.

Early Stages in the Development of Molgula. — Mr. Crampton briefly reviewed his observations on the early history of the egg in *Molgula manhattensis* as follows:[1]

The author emphasized the fact that development begins not with the cleavage or fertilization processes, but even before. From the origin of the primary oöcyte until the final assumption of the adult form, there is a continuous series of developmental changes, each stage being based upon the preceding one and conditioned by it.

---

[1] Paper read before the New York Academy of Sciences, Biological Section, Dec. 13, 1897.

The growth of the primary oöcyte and the formation of the yolk were considered at some length. A true "yolk nucleus" arises, as the author believes, from the nucleus, and this by continued growth, and later by fragmentation, gives rise to very small spherules, which later, by enlarging, form the yolk spherules. The yolk nucleus is an albuminous body closely allied to, if not identical with, the yolk or deutoplasm. This was indicated by a large number of microchemical tests. The yolk nucleus at a very early stage of the egg was also shown to be the only albuminous body in the cell; for the rest of the extra-nuclear part of the cell is almost exclusively composed of pseudo-nucleinic substances. Evidence was cited which indicated that the yolk nucleus was formed by the nucleus, and that it enlarged by constant additions to it from the nucleus.

The more important results of a study of the maturation and fertilization processes might be briefly stated, although a fuller account will appear in the published paper. The first maturation spindle arises entirely from the germinal vesicle. It is peculiar in that it is barrel shaped, and does not, as far as can be determined, bear at either end centrosomes or asters. The first polar body receives sixteen chromosomes, while sixteen remain in the egg. The second maturation spindle is also barrel shaped, and is also devoid of centrosomes and asters. Eight chromosomes remain in the egg. The sperm entrance was described in detail, and evidence was brought forward to show that the centrosomes of the first cleavage figure were derived from the sperm.

The spindle of the first cleavage figure appears to be formed from the segmentation nucleus, there being no 'central spindle' extending between the centrosomes. The spindle itself was shown to be barrel shaped, the daughter chromosomes reforming into a vesicular nucleus at the ends or heads of the barrel. A "Zwischen-Körper" also arises, as in the maturation stages, by a concentration of the spindle fibers at the equator of the figure. After the reformation of the daughter nuclei, and after division of the cell body, the paired daughter centrosomes and asters diverge. The daughter nucleus later moves up between the asters, and prepares for the next division. Comparative independence and parallelism of the processes undergone by the centrosomes and asters, on the one hand, and those of the nuclei, on the other, become very strongly probable. Detailed evidence in support of the above points will be given in the published paper, a preliminary notice.

Zoology at Johns Hopkins. — The number of the *Johns Hopkins University Circular* for November, 1897, is devoted to accounts of biological work done. In the introduction Prof. W. K. Brooks gives an outline of the work of the Jamaica expedition of 1897. Dr. H. L. Clarke's paper on the *Viviparous Synoptidæ* of the West Indies is reprinted from the *Zoologischer Anzeiger*. Prof. Maynard M. Metcalf discusses the follicle cells in Salpa, in which he supports the earlier results of Brooks. Dr. George Lefevre has a paper on "Budding in Ecteinascidia." In this form the bud development is strikingly like that in Perophora, as described by Ritter, except for the peculiar rotation of the inner vesicle, which complicates the process in that genus. Dr. F. S. Conant describes one new genus (Tripedalia) and two new species of Cubomedusæ (*T. crystophora* and *Charybdea xaymacana*). The paper is more than systematic, for it contains notes upon the anatomy and development. We understand that Dr. Conant's notes and drawings made during the past summer have been preserved and will be included in the full paper, to be published later. Mr. Gilman A. Drew has some interesting notes on the embryology of the primitive mollusk Yoldia. The most important features in the development are the formation of a larval test, only paralleled by that of Dondersia and the formation of the central ganglia from the walls of invaginations. Dr. E. A. Andrews describes some spinning activities of the polar globules in echinoderms, mollusks, and nemertines, phenomena to which attention has but recently been called.

BOTANY.

Botanical Observations on the Azores,[1] by William Trelease. — During the summers of 1894 and 1896 Professor Trelease, Director of the Missouri Botanical Garden, made two excursions to the Azores. By his friends it was generally supposed that these journeys were rather in the nature of well-earned vacation trips of a man whose productive research work and arduous executive duties must call for occasional relaxation. It is accordingly a matter of some surprise to see as a result of these trips a stout, closely printed, and excellently illustrated report, including not only a careful compilation of the work of others, but hundreds of entries of

---

[1] From the *Eighth Annual Report of the Missouri Botanical Garden*, issued Sept. 9, 1897.